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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,843	01/05/2004	Howard E. Rhodes	M4065.0947/P947	2490

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EXAMINER

MONDT, JOHANNES P

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/750,843

Applicant(s)

RHODES, HOWARD E.

Examiner

Johannes P. Mondt

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-27 and 66-77 is/are pending in the application.
- 4a) Of the above claim(s) 73-77 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-27 and 66-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/2/06 has been entered.

Response to Amendment

Amendment filed 4/10/06 has been entered in view of aforementioned RCE and forms the basis for this office action. In said Amendment applicant substantially amended elected claims 19-27 and 66-72. Claims 1-18 and 28-65 had previously been cancelled, and claims 73-77 have been withdrawn. Comments on Remarks submitted with said Amendment are included below under "Response to Arguments".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. The term "just prior" in **claim 66** is a relative term, which renders the claim indefinite. The term "just prior" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. ***Claims 19-27, 66-72*** are rejected under 35 U.S.C. 102(e) as being anticipated by Agan (2005/0057680).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Agan teaches (see [0022]-[0028]) a method of operating a pixel cell ([0018]-[0022]) of an imager, the method comprising:

accumulating charge at a photo-conversion device 22/24 (Figures 3-4) during an integration period (see his claim 20);

resetting a charge collection region 16 with a reset transistor 28 during a reset period (any period during a reset operation is a reset period, inherently so) (see his claim 20);

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storing accumulated charge from said photo-conversion device at said charge collection region via a transfer transistor 26 (see his claim 17, lines 13-15);

reading out said charge from said charge collection region (see his claim 17, lines 10-11); and

removing residual charge remaining in said photo-conversion device after said charge storage at said charge collection region, wherein said act of removing comprises activating said reset transistor 28 and said transfer transistor 26 prior to a subsequent integration period (see his claim 20 and Figure 4).

On claim 20: said act of removing comprises activating said reset transistor and said transfer transistor substantially simultaneously (Figure 4).

On claim 21: said substantially simultaneous activation of said reset transistor and said transfer transistor occurs after said act of reading out said charge (namely: after the first integration period prior to subsequent integration periods (see claim 17 and Figure 4).

On claim 22: said act of transferring comprises transferring charge from said photo-conversion device to a supply voltage V_{dd} (Figures 3 and 5).

On claim 23: the imager is a CMOS imager (abstract and [0009]).

On claim 24: the CMOS imager comprises a four or a five transistor architecture (Figures 3 and 5).

On claims 25-27: said photo-conversion device 22/24 is a photodiode (see, e.g., [0022]) or photo gate ([0002]). And hence inherently is a photodiode conductor.

On claim 66: said reset period is just prior to said integration period (Figure 4).

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On claim 67: reading out said charge from said charge collection region comprises operating a transistor for reading out said charge as a pixel signal to a read-out circuit, namely: either transistor 40 or 42 (Figure 3) connected to column read-out electrical line 31 inherently comprised in a read-out circuit.

On claim 68: the method further comprises storing said pixel signal in a sample and hold circuit 261 ([0027]).

On claim 71: said transfer transistor is de-activated before said reset transistor is de-activated (Figure 4).

On claims 69-70 and 72: the simultaneity taught by Agan is within accuracy. However, inherently, random deviations from exact simultaneity occur in any process not further controllable, in this case inter alia because of slight temperature fluctuations in the leads. Therefore, the method by Agan when applied repeatedly necessarily realizes all claimed orders of activation and de-activation of reset and transfer transistors; furthermore, it is inherent that transistors are activated by electrical signals to their gates.

Response to Arguments

The argument in traverse of a rejection of amended claim 19 is persuasive because, taken as a whole, the limitations on reset transistor are not met in Ishida et al (i.e., the limitations of *both* lines 5-6 and 10-13 implying the same reset transistor involved in both the operations of resetting of the charge collection region as claimed and the operation of removing the residual charge remaining in said photo-conversion

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device as claimed). However, a rejection is presented based on the teachings by Agan (US 2005/0057680 A1).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. **Claims 19 and 20** are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claim 20 and claim 21, respectively, of copending Application No. 10/662,445. Although the conflicting claims are not identical, they are not patentably distinct from each other because opening a mechanical shutter in the use of image sensor pixels involving an integration period is merely obvious as mechanical shutters have long been conventional in the art, while sampling per se is not distinct from reading out.

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P. Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JPM
June 12, 2006

Patent Examiner:


Johannes Mondt (Art Unit: 3663).